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INFLATION, UNCERTAINTY AND CAPACITY UTILIZATION

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The economy has expanded substantially since the dismal days of early 1975; indeed, this expansion may be characterized as the longest and the strongest peacetime recovery of the past generation. At this stage of the business cycle, therefore, we are interested in determining the extent of the pressures (if any) developing in the labor and capital markets. In other words, how far can the expansion go without aggravating the already severe inflationary pressures existing in the economy? But in addition, we are interested in determining the shifts (if any) in factor utilization created by the increased uncertainty characteristic of the inflationary 1970's. Other studies have examined these questions in terms of labor-force utilization. The three papers in this issue extend the discussion, however, by analyzing also the utilization of capacity in the industrial sector of the economy.

Joseph Bisignano, in his paper, focuses on the role that inflation plays in determining labor and capital demand in manufacturing, especially when price changes are unexpected. To help analyze this question, he considers two measures of inflation variability—"unanticipated inflation," obtained from errors of forecasts of the wholesale-price index six months into the future, and "relative price variability," measured as the variance of the rate of change in business capital-goods prices. He incorporates these inflation-variability measures into a model of the demand for two "stock" variables, capital and workers, and two "flow" variables, capacity utilization and average weekly hours.

Bisignano's study suggests that, over the 1959-75 period, unanticipated inflation has tended to reduce the demand for investment goods in manufacturing, and to increase labor demand and the rate of capacity utilization. "Our tentative evidence suggests that unanticipated inflation can affect the demand for factors of production as well as the utilization of these factors. This type of inflation thus may slow the process of capital growth. Moreover, unanticipated-inflation shocks, and their persistent effects over a prolonged period, help explain why investment demand has been sluggish since the early-1975 cyclical trough."

Bisignano raises an important question—whether unanticipated inflation affects labor demand differently than capital demand. He notes that unanticipated inflation creates additional uncertainty regarding a firm's future output prices. The firm when expanding output thus will attempt to minimize the future cost of its forecasting errors by using more of its variable factor, labor, and less of its fixed factor, capital. The risk-averse firm, encountering greater uncertainty over the real value of future streams of income, will attempt to minimize those investments that are least reversible, such as long-term investment in plant and equipment. Unanticipated inflation thus causes changes in factor-demand response by inducing the substitution of labor for capital.

Rose McElhattan develops a combined price equation, connecting inflation and capacity utilization, analogous to the inflation/unemployment relation so often discussed in the literature. Her study suggests the existence of a full-capacity utilization rate which is consistent with the "natural rate of unemployment" concept. (According to that view, there is only one full-employment unemployment rate, towards which the economy tends over time.) Attempts to maintain a capacity-utilization rate above the estimated full-capacity equilibrium rate appear to be associated with a steadily increasing inflation rate.

At what specific point in the use of the nation's industrial capacity are inflationary pressures likely to increase? Many economists believe that the yardstick is provided by the historical peak of capacity utilization—that is, the 87-to-88 percent level of the 1973 period. McElhattan's analysis suggests, however, that the full-capacity utiliza-

tion rate is reached at a somewhat lower level, so that there is less non-inflationary slack in the present economy than is commonly believed.

She argues that inflation tends to accelerate when the operating rate surpasses 82 percent—or more generally, the range of 80 to 83½ percent. "Once beyond that range, excess demand generates inflationary pressures as less efficient labor and capital resources are called into use. Thus, since utilization rates recently have approached 85 percent, we could expect mounting inflationary pressures from the domestic, nonfarm business sector of the economy."

Her estimates also indicate that for every percentage-point increase in capacity utilization above 82 percent, the rate of inflation should increase .12 percentage points on average. For example, if the yearly operating rate averages 88 percent—the historical peak value—the annual inflation rate should increase .72 percentage points on average. "Once capacity utilization exceeds the range indicated, the increased inflation tends to become imbedded in future inflation, with the current period's higher prices being reflected in the next period's expectations. When the operating rate rises above the full-capacity range, its return to that range will be accompanied by a higher rate of inflation."

Larry Butler analyzes the apparent conflict between the unemployment rate and the capacity-utilization rate—the two measures of the available economic capacity at the nation's disposal. He recognizes the argument that the conflict may be apparent rather than real, because structural changes in the economy—such as labor-force shifts—have made it difficult to compare the measures over time. He claims, however, that it is not necessary to resort to structural arguments to explain the current divergence of the two rates. "Rather, the two markets need not reach full-resource use at the same point in the business expansion, because capital and labor supplies exhibit different cyclical patterns. New additions to the capital stock are concentrated in the mature-recovery portions of cyclical expansions, while new additions to the labor force are concentrated in the brief periods following cyclical troughs."

Butler deals with this problem by developing a two-factor model—one which includes the capital market as well as the labor market used in the standard (single factor) aggregate-demand model. The single-factor model adequately describes such mature-recovery periods as 1956-57 and 1967-69, which were capital-constrained with high levels of capacity utilization, and also labor-constrained with quite low levels of unemployment. However, the two-factor model provides a much better explanation of three brief but important periods of transition to full employment—in 1955, 1965 and 1973. "More importantly, that model may be relevant to the period immediately ahead, which is likely to be marked by capital constraints but also by adequate supplies of labor."